by ammonia. In quantitative estimations, one adds to the weight of the precipitated strychnine the weight of that dissolved in the solution (according to the author, 1 part in 6667). With the other alkaloids the oxalate is dissolved in alcohol, the oxalic acid removed with alcoholic potash, the potash by passing carbonic acid through the mixture, and the pure alkaloid is then obtained by evaporation of the alcoholic solution—S. R.

New Books.

Physico-Chemical Constants, Melting and Boiling Point Tables. By Thomas Carnelley, D.Sc., B.Sc., F.C.S., Professor of Chemistry in University College, Dundee. Vol. I. London: Published by Harrison & Sons, 59, Pall Mall, 1885.

Quarto Volume, bound in black cloth, containing preface, table of contents, explanatory notes, list of abbreviations alphabetically arranged, catalogue of reference literature (with abbreviations) also alphabetically arranged, and subject matter in the shape of the tabulated constants, etc., extending over 352 pages; price £2 2s. This important work the author has very appropriately dedicated to his old teacher, Sir Henry Enfield Roscoe, LL.D., F.R.S. The tables are arranged in vertically divided columns, headed as follows:—Name (of Substance); Remarks; Formula; Boiling Point; Melting Point; Authority; Reference; *Watts. Dict.* and *Journ. Chem. Soc.* The table of contents includes the following, and thus the compass of the first volume of this work will appear:—Part I.—Elements and Inorganic Compounds. I. Elements. II. Compounds containing *two* Elements. III. Compounds containing *three* Elements. IV. Compounds containing *four* Elements. V. Compounds containing *five* Elements. VI. Metallic Alloys:—*a.* Alloys of *two* metals; *b.* Alloys of *three* metals; *c.* Alloys of *four* metals. VII. Alloys of Inorganic Compounds: *a.* Alloys of *two* compounds; *b.* Alloys of *three* compounds. Part II.—Organic Compounds. I. Compounds containing *two* Elements. II. Compounds containing *three* Elements. The "Apology for writing this book" by the author, it is only fair to state. Those who imagine the work to be one of essential value for reference for chemical formulæ, melting- and boiling-points are entirely correct, but it serves another equally valuable purpose, for the research-chemist perhaps a still more valuable one—viz., to take the place of a class of works possibly better known in Germany than in this country, as a] "*General-Register,*" for ready and rapid reference to the original sources in the whole of the literature of chemical experience or research. In the preface Dr. Carnelley writes:—"My object in preparing the tables has been—*First:* To present as complete a list as possible of *all* known melting- and boiling-point data, and at the same time to indicate which of them is probably the most exact when there are several determinations referring to the same substance. *Second:* To state as fully as possible the constitution of each substance to which the data refer. *Third:* To adopt such a system of arrangement as would facilitate, as far as possible, the ready finding of the data relating to any given substance. *Fourth:* To give the authority and reference to the original memoir in each case. *The tables thus form a catalogue also of the literature referring to most chemical substances. Fifth:* As but comparatively few chemists have sufficiently large libraries of their own, or can conveniently refer to the original papers in all cases, I have thought it desirable to give in addition the reference (if any) to either *Watts' 'Dictionary of Chemistry,'* or to the '*Journal of the Chemical Society of London,*' or both. This is a feature of the work which I believe will be found particularly useful, more especially to British and American investigators."

Monthly Patent List.

ENGLISH APPLICATIONS.

1885.

I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

9318 J. Hill, Glasgow. Improvements in and connected with gas-producers, and regenerators or furnaces, and their construction and arrangement and fittings as applied to steam boilers for the generation of steam. August 19

9930 W. Hutchinson, London. Improvements in refrigerating apparatus. August 21

10083 J. Storer, Glasgow. Improvements in constructing furnaces, converters, flues, and other apparatus in which great heat is employed. August 26

10112 A. Reis, London. An apparatus for producing a draught in boiler and other furnaces, and for purifying the products of combustion. August 26

10143 J. A. Drake and R. Muirhead, London. Improvements in and connected with filter presses. August 27

10166 J. Johnston, Manchester. Improvements in apparatus for heating, drying, and other purposes. August 27

10169 B. H. Remmers and J. Williamson, Glasgow. Improvements for facilitating the removal of cakes or sludge from filter presses. August 27

10258 A. Dempster, Elland. An improved fastening for retort lids, furnace doors, covers, and the like. August 29

10355 E. Edwards, London—Communicated by G. Lunge, Switzerland, and L. Rohrmann, Germany. Improvements in apparatus for effecting the absorption of gases by liquids or solids. September 1

10570 B. H. Remmers and J. Williamson, Glasgow. Improvements in filter presses. September 7

10618 J. Binks Cooper, Whitehaven. Improvements in stationary boiler flues for economising fuel and consumption of smoke. September 9

10657 F. Bernard Dœring, London. Improvements in apparatus for evaporating sea-water, nitrate, or other solutions or liquids. September 9

10663 E. Edwards, London—Communicated by E. Fourcault and E. Jacques, Belgium. Improvements in regenerative hot-air furnaces. September 9

II.—FUEL, GAS, AND LIGHT.

9773 H. J. Allison, London—Communicated by C. Carroll Yeaton, United States. Improvement in process of generating hydrogen gas. Complete specification. August 18

9797 H. Ffrench Bromhead, London. Improved device or apparatus for purifying gas. August 18

9876 J. Murrie, Glasgow. An improved method of generating vapour. August 20

10139 J. Kingsford Field, London. Improvements in treating hydrocarbon bodies or substances. August 27

10231 L. Chandor. A tischolin candle. Complete specification. August 29

10301 J. H. Selwyn, London. Improvements in liquid fuel furnaces and their appliances. August 31

10535 H. J. Haddan, London—Communicated by W. St. Martin, Belgium. Means or apparatus for obtaining an inflammable gas mixture from mineral oil and water or steam, and for utilising the said mixture for the production of heat and light. September 5

10666 C. W. Bradshaw, Tottenham; and J. Carpenter, Hammersmith. Apparatus for generating gas for illuminating and other purposes from mineral and other oils. September 9

III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, Etc.

10138 H. J. Haddan, London—Communicated by J. Quaglio, Germany. Apparatus for compressing coal and introducing the same into coke-ovens. September 3

IV.—COLOURING MATTERS AND DYES.

9858 J. H. Johnson, London—Communicated by The Badische Anilin- und Soda-Fabrik, Germany. Improvements in the manufacture of yellow and orange colouring matters suitable for dyeing and printing from dioxytartaric (carboxytartronic) acid. August 19

10377 W. Clark, London—Communicated by the Fabrik vorm. Brönner, through Wirth & Co., Germany. Improvements in the production of colouring matters. September 1

V.—TEXTILES: COTTON, WOOL, SILK, ETC.

9811 M. Raabe, A. C. G. Skynner, and S. Henning, London. A new manufacture of yarns and woven and felted goods from animal and vegetable fibres, the said vegetable fibres being treated so as to give them qualities and characteristics of animal fibres, and being applicable also for use alone in the manufacture of yarns and woven and felted goods. August 18

9931 J. V. Eves, London. Improvements in machinery for the preparation of flax, tow, and other fibrous substances. August 21

10016 H. J. Haddan, London—Communicated by Pelzer et Fils, Belgium. Improvements in the treatment of textile materials with liquids and gases, and in apparatus therefor. August 25

10265 J. C. Mewburn, London—Communicated by F. Lorthiois, France. Improvements in and apparatus for desiccating wool to facilitate the removal of vegetable substances therefrom. August 29

10508 R. Wild and H. Ledger, Leek. Improvements in the means and apparatus for breaking, opening, separating, combing, and cleaning and carding of fibrous materials. September 5

10509 R. Wild and H. Ledger, Leek. Improvements in the mode and apparatus for the breaking and opening up and cleaning, washing, bleaching, and drying of fibrous materials. September 5

10551 W. H. Slade, London. An improved waterproof cloth. Complete specification. September 7

VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

10723 C. J. Cox, London—Communicated by Aug. Jeannolle, France. An improved method of dyeing black upon cotton, silk, or wool, or a combination in raw, hank, or manufactured fabric, producing thereby a solid, clean, and permanent black. September 10

VII.—ACIDS, ALKALIS, AND SALTS.

9831 W. Weldon, Burstow—Communicated by A. R. Pechiney et Cie., France. Improvements in mode of procedure for decomposing by magnesia the mother-liquor of the ammonia-soda process. August 19

9853 T. H. Cobley, Dunstable. Improvements in the manufacture of carbon alum, and application of the same to useful purposes. August 19

10080 E. W. Parnell and J. Simpson, Liverpool. Improvements in obtaining sulphur from sulphuretted hydrogen. August 26

10598 A. E. Robinson, Edgbaston. Improvements in the preservation from oxidation of certain salts of iron. September 8

10661 A. Pillans Laurie, Glasgow. Improvements in the preparation of crystal soda and caustic soda from tank liquor. September 9

10700 J. J. Hood, London. Improvements in the manufacture of ammonic bichromate. September 9

VIII.—GLASS, POTTERY, AND EARTHENWARE.

10378 G. Jones Atkins, London. A new or improved furnace for burning or firing stained or painted glass and enamels, and for other purposes. September 1

IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

9780 W. P. Thompson, Liverpool—Communicated by G. Lilienthal, Melbourne. Improvements in the manufacture of artificial stone. August 18

10362 G. Butchard, London. Improvements in the manufacture of cement, and apparatus therefor. September 1

10415 G. Bird, London. Improvements in paving bricks. September 3

10451 W. R. Lake, London—Communicated by F. J. Grenièr, France. Improvements relating to cement and similar materials, and to the utilisation of the same for paving and other purposes. September 3

10480 W. G. Margetts, London. Improvements in the method of loading or charging cement kilns. September 4

10492 W. Clark, London—Communicated by E. E. Fagnet, France. The manufacture of a composition suitable for making wall coverings and other fabrics, moulded articles and other uses. September 4

10544 M. Beaumont Parrington, London. Improvements in kilns and other structures employed in the manufacture of lime and cement. September 5

10585 G. Butchard, London. Improvements in kilns. September 7

10710 G. Butchard, London. Improvements in kilns for burning cement. September 10

X.—METALLURGY, MINING, ETC.

9781 W. P. Thompson, Liverpool—Communicated by E. H. Cowles and A. H. Cowles, United States. A new or improved process for obtaining aluminium and other metals from their ores, alone, or as alloys with copper or other metals. Complete specification. August 18

9809 W. R. Walton, London. Improvements in the process of preparing copper for casting. August 18

9841 D. H. Haggie and G. A. Haggie, London. Improvements in the manufacture of ropes of metal. August 19

9883 G. Leyshon, London. A new or improved method of and apparatus for manufacturing tin and terne plates or sheets, and for galvanising sheets of iron. August 20

9887 S. H. Emmens, London. Improvements in the chemical treatment of certain aluminous minerals, and in the utilisation of the industrial products thereby obtained. August 20

9891 J. Gilling Williams, London. An improved process for making purple ores or other fine ores into bricks or blocks of required "shape." August 20

9993 H. Grimshaw, Manchester. A new or improved process for treating galvanised iron or steel. August 21

10018 H. H. Lake, London—Communicated by the Verein Chemischer Fabriken, Germany. Improvements relating to the separation of tin from tin-plate, and to the production of protochloride of tin. August 21

10024 R. Oxland and C. Oxland, London. Improvements in the treatment of ores and materials containing sulphur for the extraction of metals and other constituents. August 21

10055 R. Bonehill and L. Hagué-Halon, Liverpool. A blast-furnace for the treatment of all kind of ores. August 25

10085 C. Berry Phillips and G. Bargate, Chester. Smelting of complex ores, such as the Anglesea and Wicklow bluestone or similar ores. August 26

10119 S. H. Stephens and S. Rodda, London. Improvements in machinery for the reduction of tin stuff and other partially pulverised ores, to extract the metal therefrom, as well as for grinding paint, cement, and other hard substances. August 26

10151 W. H. Duncan, Coalbrookdale. Improvements in extracting, washing, and delivering gold, silver, diamonds, lead, and other metals. August 27

10185 F. M. Lyte, London. Improvements in the manufacture of cupels in the cupellation of metals, and in the production of other refractory apparatus and materials. August 27

10237 O. Morton Thowless, Birmingham. Soldering aluminium and the preparing of aluminium for such soldering. August 29

10256 W. P. Thompson, Liverpool—Communicated by R. Tamine and E. de Cuyper, Belgium. Improvements in the manufacture of oxides of tin and tin salts. August 31

10491 L. A. Groth, London—Communicated by D. Mindeleff, United States. A method and apparatus for extracting nickel and cobalt from ores containing them. Complete specification. September 4.

10528 J. H. Williamson, London. Amalgamating, joining, soldering, and (or) autogenously uniting aluminium. September 5

10621 J. Dixon, F. J. Blades, W. Selby Douglas, D. Garlick and W. Malcolm, London. Improvements in the process of smelting pyrites and in the tuyeres of blast-furnaces to be used for the purpose, comprising also a novel method and apparatus for feeding such furnaces. Complete specification. September 8

10658 C. M. Pielsticker, London. Improvements in metallurgical apparatus. September 9

10698 C. Cochrane, London. An improvement in the working of blast-furnaces. September 9.

10712 W. Pritchard-Morgan, London—Communicated by F. Ellershausen, France. A process for separating silver from lead. September 10

XI.—FATS, OILS, AND SOAP MANUFACTURE.

9895 A. Lovell, London. An improved lubricating compound. August 20

10225 W. R. Lake, London—Communicated by T. Howard Jacobs and J. Yeatman Lockwood, United States. Improvements in the manufacture of oil, oilcake, and meal from Indian-corn or maize. August 28

XII.—PAINTS, VARNISHES, AND RESINS.

9982 C. D. Abel, London—Communicated by W. J. Wisse, Holland. An improved protective material for iron and steel. August 22

10344 W. Wells, London. An improved process for the production of carbon from refuse bark, to be utilised for the manufacture of paint, and for other purposes. August 31

10409 H. Gardner, London—Communicated by D. Lublinski, Germany. Improved compound for application to wood, metal, or other substance as a paint or varnish to prevent decay, rust, or other injury by atmospheric action (to be called Keralin). September 2

XIII.—TANNING, LEATHER, GLUE, AND SIZE.

10147 J. C. Mewburn, London—Communicated by J. Marchal et L. Bories, France. A process of treating tannic extracts or juices. August 27

10562 W. Moore Riddell, Forest Hill. Improvements in the manufacture of tannin and the treatment of vegetable fibres to render the same suitable for various useful purposes. September 7

XV.—SUGAR, STARCH, GUMS, Etc.

10058 F. Wheaton Seabury, London. Improvements in method and apparatus for vulcanising rubber. Complete specification. August 25

10110 C. A. Henderson, London—Communicated by G. Durozad, France. An improved process for manufacturing sugar from amylaceous and cellulose matters. August 26

10172 P. Jensen, London—Communicated by M. C. P. Barbe, Holland. Improvements in the manufacture of refined sugar, and in apparatus therefor. Complete specification. August 27

XVI.—BREWING, WINES, SPIRITS, Etc.

9798 A. J. Boult, London—Communicated by A. S. Bigelow, United States. Improvements in pressure regulators for fermenting liquids. Complete specification. August 18

9847 P. M. Justice, London—Communicated by A. W. Billings, United States. Improvements in the manufacture of beer. Complete specification. August 19

9869 W. Whitson Crawford, Glasgow. Maturing of spirits in bottle or other non-absorbing vessels. August 20

9950 H. H. Lake, London—Communicated by A. E. Fowe, United States. Improvements in the manufacture of syrup and beer from maize or Indian corn and malt. Complete specification. August 21

9956 C. R. Bonne, Manchester. An apparatus for testing brewing materials. August 22

10358 M. Hedicke, London. Improvements in the drying of malt and in the construction of malt-kilns therefor. September 1

10527 H. T. Warne, London. Improvements in refrigerators for cooling malt liquors, wines, aërated waters, and other liquids. September 5

XVII.—CHEMISTRY OF FOODS, SANITARY CHEMISTRY, DISINFECTANTS, Etc.

9806 H. Fisher, Chelsea. The filtration of smoke. August 18

9992 J. Clough Thresh, Buxton, and M. Hilton, Prestwich. The purification of sewage, sewage water, bleachers', dyers', and printers' effluent water, impure sewage and well water, and for the removal of organic matter from potable water; and for the application, utilisation, and recovery of all matters relating thereto. August 24

10123 W. J. Bishop, London. Mixing liquid disinfectants with water in any required proportion by means of an automatic apparatus. August 26

10124 A. J. Boult, London — Communicated by L. M. Rousseau, France. Improvements in the preservation and treatment of dried or cooked meats, and the manufacture therefrom of various articles of diet. August 26

10130 H. H. Lake, London—Communicated by C. Collin & Co., Belgium. The manufacture of an improved antiseptic. August 26

10137 W. Spence, London—Communicated by F. Sanders, Russia. Improvements in apparatus for removing sewage or other impurities from cesspools, sinks, and the like. August 27

10212 P. Ockenden, London—Communicated by H. Rocke and H. T. Tompsitt, Australia. A new or improved antiseptic deodorant, and disinfectant compound. August 28

10332 W. Lucock, Birmingham. Improvements in the preparation and medication of cocoa, chocolate, coffee, and similar substances for beverages. Complete specification. September 1

10351 H. J. Haddan, London—Communicated by H. T. Baeschlin, France. A new frigorific or compound for producing cold. September 1

10379 J. Peachey, Worcester. Manufacturing sanitary urinals and disinfectants. September 2

10581 J. Stewart Edwards and J. Edwards, London. Improvements in apparatus for drying animal matter, fish, and other materials, applicable also for evaporating liquids. September 7

10604 F. Bosshardt, London—Communicated by U. Egger, Switzerland. An improved apparatus for testing the quality of milk. September 8

10732 H. Compton, Palampur, East Indies. The desideratum desiccator for the rapid desiccating, drying, cooking, roasting, or evaporating of tea, fruit, hops, or any articles for which rapid or thorough desiccation is necessary, and especially for those articles which are injured by a damp heat. September 10

XIX.—PAPER, PASTEBOARD, Etc.

10092 J. Kenyon, London. Improvements in the manufactue of cotton and woollen drying felts used by paper makers. August 26

10313 G. T. Talbot, London—Communicated by J. Drew Gay, United States. An improved method of treating vegetable fibres for the manufacture of paper. August 31

10331 J. Plummer, jun., Edinburgh. Improvements in treating fibrous substances to prepare pulp for making paper, and for other purposes. September 1

10368 J. B. Alliott, London—Communicated by H. Lahousse, France. New or improved apparatus for treating or drying paper-pulp, textile fabrics, and other like substances. September 1

10513 C. J. Richardson, London. Improvements in apparatus for the manufacture of paper. September 5

XXI.—EXPLOSIVES, MATCHES, Etc.

9884 S. H. Emmens, London. Improvements in the construction of blasting cartridges, and in apparatus for using the same. August 20

10440 W. F. Ruston, London. Improvements in detonating fog signals for railways. September 3

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*ENGLISH PATENTS PUBLISHED.**

APPLIED FOR DURING 1884 AND 1885.

I.—GENERAL PLANT, APPARATUS, AND MACHINERY.

1884.

13350 J. W. Chalk Webb. Kilns and stoves. 6d

13753 S. Smillie. Apparatus for heating and cooling fluids. 4d

13312 E. C. C. Stanford. Compositions or coatings to act as non-conductors of heat. 4d

II.—FUEL, GAS, AND LIGHT.

1884.

13143 R. W. Thom. Apparatus for washing, scrubbing, and purifying, and also for charging and impregnating coal and gases with hydrocarbon vapours. 6d

13191 H. J. Rogers. Apparatus for the manufacture of gas. 6d

14114 F. Noel Mackay and W. Baxter. Apparatus for solidifying paraffin in oils. 6d

1885.

7581 E. Capitaine and O. Brünler. Production of compressed gaseous compound for use in gas motors, etc., and apparatus therefor. 6d

7615 J. D. Bodwell. Apparatus for the combustion of liquid fuel. 6d

III.—DESTRUCTIVE DISTILLATION, TAR PRODUCTS, Etc.

1884.

13629 H. W. Fenner. Distillation of coal-tar and other hydrocarbon substances, and apparatus employed therein. 6d

13630 H. W. Fenner. Heating of stills or boilers employed in the distillation of coal-tar and other hydrocarbon substances. 4d

13650 B. P. Walker. Method of heating substances for the purpose of distillation. 4d

1885.

8181 L. T. Wright. Improvements in hydraulic mains used in the distillation of coal. 6d

V.—TEXTILES: COTTON, WOOL, SILK, Etc.

1884.

13815 W. H. Beck—Communicated by C. Viollette, A. Buisine, and A. Vinchow. Process for obtaining useful products from the yolk or grease of wool. 6d

VI.—DYEING, CALICO PRINTING, PAPER STAINING, AND BLEACHING.

1884.

13258 W. H. Beck—Communicated by La Société Ch. Toussant et Cie. Process for cold scouring and dyeing cotton. 4d

13678 C. F. Cross and J. P. Rickman. Improvements in bleaching. 4d.

11225 J. Claro. Process of dyeing black on cotton, cotton yarns, or cotton fabric, or other vegetable fibre. 2d

11276 W. P. Thompson—Communicated by A. Descroix. Dyeing with aniline-black. 2d

11561 J. Doutrelau. Process for discolouring and purifying vegetable extracts containing tannin. 2d

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*Any of these specifications may be obtained by post, by remitting the cost price, plus postage, to Mr. H. Reader Lack, Comptroller of the Patent Office, Southampton Buildings, Chancery Lane, London, W.C. The amount of postage may be calculated as follows:—

If the price does not exceed 8d.	½d.
Above 8d., and not exceeding 1s. 6d.	1d.
„ 1s. 6d., „ „ 2s. 4d.	1½d.
„ 2s. 4d. „ „ 3s. 4d.	2d.

1885.

918 (Amended specification) E. J. Homan. Embossing, printing, etc., designs upon tissues and similar materials. 6d

REPRINT.

12172 of 1884 C. R. Preibisch. Dyeing fabrics aniline-black. 6d

VII.—ACIDS, ALKALIS, AND SALTS.

1884.

12718 H. Brunner. Treatment of certain phosphatic materials. 4d
12834 W. A. Rowell. Manufacture of chromic acid. 4d
13025 J. Taylor. The preparation of chlorine gas on the large scale. 2d
13133 E. C. Cortis Stanford. Manufacture of algin and other useful products from seaweeds. 4d
15719 H. Knight. Manufacture of sulphide of zinc or of pigments having sulphide of zinc as a constituent or ingredient. 4d
16220 H. Knight. Manufacture of sulphide of zinc and of hydrate or other salts of baryta or strontia. 4d

1885.

7135 P. Römer. Manufacture of bichromate of potash. 2d
7355 H. H. Lake—Communicated by A. Kayser, A. B. Young, and H. Williams. Method or process for the manufacture of carbonate of soda or soda-ash. 2d

AMENDED SPECIFICATIONS.

3229 of 1883 E. P. Potter and W. H. Higgin. Manufacture of chromates of soda. 4d
4028 of 1884 W. J. Chrystal. Manufacture of bichromate of soda. (Price not given in official journal.)

VIII.—GLASS, POTTERY, AND EARTHENWARE.

1884.

12901 J. Budd. Process of imparting to glass the appearance of marble or other stone. 2d
12902 J. Budd. Method of ornamenting or decorating glass in imitation of mosaic or similar work. 4d
14285 E. Brooke. Improved construction of tank for melting glass. 4d

IX.—BUILDING MATERIALS, CLAYS, MORTARS, AND CEMENTS.

1884.

13761 M. Dennstedt. Manufacture and preservation of articles of gypsum, stucco, etc. 4d
14010 H. J. Cooper. Manufacture of Portland cement. 4d

SECOND EDITION.

6983 of 1836 F. Moll. Preserving timber. 4d

X.—METALLURGY, MINING, ETC.

1884.

13019 G. Nurse. An improved method of finishing terne and tin plates. 6d
13912 E. Morewood. Tinning sheets or plates of metal. 6d
14071 J. Makin. Coating iron, steel, or other metal with lead. 4d
14085 T. Hampton. Manufacture of steel and ingot iron. 4d
14672 *H. J. Haddan—Communicated by A. Lambotte.* Recovery of tin from tin-plate scrap, and other materials containing tin, such as oxidised metal and residues. 4d

1885.

7858 H. von Grousilliers. Producing aluminium from chloride of aluminium by employing pressure. 4d
8269 T. Nordenfelt—Communicated by C. G. Wittenström. Manufacture of castings from wrought-iron and steel. 2d
8178 J. T. King—Communicated by S. T. Owens. Metallurgical furnaces. 4d
8693 J. A. Longridge. Construction of ordnance. 6d

SECOND EDITION.

9131 of 1842 J. S. Woolrich. Coating metals. 6d

XI.—FATS, OILS, AND SOAP MANUFACTURE.

1884.

11109 W. Büttner. Apparatus for extracting fat, grease, or oil from bones, wool, or other greasy substances. 6d

XII.—PAINTS, VARNISHES, AND RESINS.

1884

12807 J. Imray—Communicated by E. Schnall. Production of the acid ethers of resinous gums, such as copal and the like. 4d
13867 A. J. Boult—Communicated by S. Bond. Manufacture of paint. 4d
15719 H. Knight. Manufacture of sulphide of zinc or of pigments having sulphide of zinc as a constituent or ingredient. 4d

XIII.—TANNING, LEATHER, GLUE, AND SIZE.

1884.

14587 A. M. Clark—Communicated by H. Schwalbacher. Manufacture of artificial leather. 4d

1885.

7915 T. R. Clark. Process for the manufacture of glazed leather. 2d

XIV.—AGRICULTURE, MANURES, ETC.

1884.

13080 W. H. Sampson. Deodorising refuse substances for manures. 2d

XVI.—BREWING, WINES, SPIRITS, ETC.

1885.

127 S. Briggs. Refrigerators for brewers and distillers. 6d
4956 W. R. Lake—Communicated by W. T. Jebb. Manufacture of malt liquors. 6d
6821 C. R. Bonne. Apparatus for producing carbonic acid gas, and for utilising the same in raising malt liquors. 6d

XVII.—CHEMISTRY OF FOODS, SANITARY CHEMISTRY, DISINFECTANTS, ETC.

1884.

13588 E. Capitaine—Communicated by M. Nohnsen. Purification of waters. 4d
13667 A. J. Bickmore—Communicated by H. Lehrenkrauss. Process of manufacturing from cereals and pulse, an extract containing the nutritious value of the seeds, for use in bakers' and confectioners' articles. 4d
13923 W. W. Nightingale. Manufacture of transparent ice. 8d
15085 O. Matthews Row. Apparatus for condensing steam or obtaining fresh water from salt water or impure water by evaporation and condensation. 6d

1885.

908 G. H. Ellis. Process for the manufacture of a filtering, deodorising, and decolourising substance or medium from carbonaceous or lignite clay. 4d
8282 O. F. Oberg. New mode of manufacturing filtering material for purifying water from micro-organisms. 2d

XIX.—PAPER, PASTEBOARD, ETC.

1884.

13561 H. P. Howard, S. Jones, and F. Jones. Improved printed waterproof paper. 2d

1885.

8012 A. J. Boult—Communicated by W. C. Zeidler. Treatment of celluloid, xylonite, and of similar substances. 4d
8130 T. R. Shillito—Communicated by C. Arnold. Manufacture of paper parchment or vegetable parchment. 4d
8685 J. P. Cornett. Trimming the edges of paper or pulp by means of a jet of water or other fluids. 4d

XX.—FINE CHEMICALS, ALKALOIDS, ESSENCES, AND EXTRACTS.

1884.

12807 J. Imray—Communicated by E. Schaal. Production of the acid ethers of resinous gums, such as copal and the like. 4d

XXI.—EXPLOSIVES, MATCHES, ETC.

1884.

14379 F. Maxwell-Lyte and C. L. J. A. Lewall. Manufacture of explosive compounds. 4d

1885.

7460 A. J. Boult—Communicated by W. F. Wolff and M. de Förster. Method of charging hollow projectiles with compressed granular explosive substances. 4d

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LONDON OFFICE for the Sale of Copies and Receipt of Subscriptions: 6, York Street, Covent Garden.